ALLELOPATHIC EFFECT OF FOUR INVASIVE PLANTS ON SEED GERMINATION OF WILD MUSTARD

Mariem Boukhili[1], Arnold Szilágyi[2], Andrea Cheradil[3]

University of Debrecen, Faculty of Agricultural, Food Sciences and Environment Management, Plant Protection Institute, Debrecen
mariemboukhili22@gmail.com

Presently, chemical control is most used method for plant protection. However, it is not an approach that is environmentally sustainable. Alternative IPM methods include biological control such as Allelopathy. Allelopathy is defined as a direct or indirect interaction, whereby allelochemicals released by one organism influence the physiological processes of other neighboring organisms.
Laboratory experiments were conducted to investigate the allelopathic effect of four weeds, *Eriochloa villosa* (ERIVI), *Panicum miliaceum* (PANMI), *Cannabis sativa* (CANSA), *Sorghum halepense* (SORHA), *Asclepias syriaca* (ASCSY) on germination and growth of wild mustard (Sinapis arvensis L.). These weeds are dangerous during field cultivation and their weed control is difficult.
The extracts from the leaves and stem were used to examine the potential of inhibition of germination, root length, shoot length and full plant. Water extracts were prepared in a laboratory assay at 1, 5, and 10% concentrations.
The phenomenon of allelopathy was detected in the examined plants. In the case of plants, the allelopathic effect also increased with increasing concentration. The results show that extracts of Johnson grass had the most significant inhibition effect of growth followed by common milkweed, woolly cupgrass, hemp and common millet. The extracts of Johnson grass had the most significant effect of germination and followed by *Cannabis sativa, Asclepias syriaca, Panicum miliaceum and Eriochloa villosa.*